INDIAN EDUCATION

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INDIAN EDUCATION

JOURNAL OF

THE ALL-INDIA FEDERATION OF EDUCATIONAL ASSOCIATIONS

THIS JOURNAL is the official organ of the ALL-INDIA FEDERATION OF EDUCATIONAL ASSOCIATIONS. It is published monthly. The AIFEA was founded in 1925 and today it has 55 national and state associations of teachers and educators affiliated to it, with a membership in the neighbourhood of 400,500. The AIFEA is affiliated to the WORLD CONFEDERATION OF ORGANIZATIONS OF THE TEACHING PROFESSION.

THE OBJECTIVE is to afford an educational forum for administrators, teachers, parents, social workers, psychologists, psychi-artists and all those interested in the liberal education at all levels-viz., Infant, Primary, Secondary, Technical, Vocational and University—so as TO SUPPLY STIMULI TO INVENTIVE THOUGHT AND CONSTRUCTIVE ACTION.

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INDIAN EDUCATION

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Editor: E. W. FRANKLIN

VOLUME IV FEBRUARY, 1965 No. 3

Editorial

THE 39th All India Education Conference was held at Indore from December 27 to 31, 1964. It was attended by a large number of delegates. The sectional meetings had chosen their special themes concerning current educational issues and discussions in most of them was lively and interesting. A special mention may be made of the Secondary Education Section which devoted a whole day to the consideration of its theme "Improvement in the Standards of Secondary Education". It is to be hoped that in the future years some of the larger sectional meetings are spread over at least one day so as to enable more participants to take part in the general discussion.

In this number are included some of the addresses and papers presented at this Conference. The Presidential address was delivered by Mr. Dev Kanta Barooah, Minister for Education, Assam. He surveyed the major problems confronting education in India and his observations on them are truly practical and realistic. It was a privilege to have him preside at this session. Shri Barooah has recently succeeded in raising the salaries of teachers in his State both

at the Primary and Secondary level to a standard which today is one of the highest in the country. His concern and solicitude for the teaching profession is commendable.

The Secondary Education Section was presided over by Dr. P. D. Shukla, Joint Educational Adviser, Ministry of Education. His address dealt with the significant aspects of reform needed in secondary education and it aroused great interest and a fairly large number of delegates presented their views and comments.

The Sheshadri Memorial Lecture was delivered by Shri Ramani Mohan Roy, Principal, Surendranath College, Calcutta Apart from surveying the present field of education in the country, Mr. Roy has made concrete suggestions in regard to the reorientation of Collegiate and University Education. His observations deserve careful study.

Mr. Shah's article deals with curriculum development. The essential features in curriculum development have been set out briefly. Mr. Bagchi's paper surveys the development of primary education and its curriculum in Madhya Pradesh.

Recently the Benaras University Amendment Bill was debated in the Lok Sabha. Prof. D. C. Sharma, President AIFEA, in his capacity as a member of the Lok Sabha offered critical comments on this bill and these are included in this issue.

* EDUCATION IN INDIA—TODAY AND TOMORROW

By Dev Kanta Barooah, *Minister for Education, Assam.*

It is indeed a great honour and privilege to preside over the All India Conference of Education Associations, particularly for a person like me whose experience in the field of education is confined to the duties and responsibilities of a mere administrator. Strictly speaking, I am only a spectator, although a deeply interested one. It is, therefore, with a great sense of diffidence and humility that I propose to discuss some of the problems that confront both educationists and educational administrators.

Education like all social phenomena is conditioned by the social milieu in which it functions. Nonetheless, it has also the responsibility of rising above the backward pulls of society in order to give a direction to it, while meeting its requirements and conforming to its general purpose. Education in pre-Independent India, with its colonial regime and agrarian and semi-feudal economy, had a very narrow social purpose, it touched only a limited class and catered to their needs. Education in an overwhelmingly agrarian economy was hardly a necessity in life except for getting government jobs. Whatever achievements individual Indians made in the educational and cultural field were not because of the educational policy of the colonial regime, but generally speaking, inspite of it. All this was changed when India became free and democratic Republic was established. The Constitution of India conceded to every citizen of India not only a right to vote but also the right to education. The acceptance of a planned economy for the purpose of accelerated industrial and economic development of the country has made education a necessity, as without education no advancement of India is possible. All progressive nations of the world, when they launched of their programmes of technological development, started with free and compulsory elementary education; because no country can hope to develop its industrial potentialities without a large body of technical personnel of different categories who require a

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* Presidential Address at the 39th AIFEA Conference at Indore.

minimum standard of education. Even for stepping up agricultural production, we need at least a literate peasantry who will be able to assimilate the rudiments of agricultural science. It is in these contexts that accelerated expansion of education at all levels becomes a must and the heavier the investment in education, the greater will be our achievements in different fields. In brief, in free and democratic India, education to be useful and effective will have to march along if not ahead of the democratic and progressive forces which were generated by the inspiring leadership of our late Prime Minister, Pandit Jawaharlal Nehru. It is this yardstick by which we have to assess the growth of education in India since Independence.

In 1949, the total enrolment of pupils was 23·9 million and the estimated enrolment in the year 1965 is of the order of 65 million. It is no doubt an impressive performance; yet we have to take note of the distressing fact that even in 1965, we will be short of reaching the goal of universal education which is enjoined upon by our Constitution, as we hope to achieve only 61 percent of the enrolment in the age group 6 to 14 years, instead of 100 percent. It is, therefore, imperative that in our national interest there should be no slackening of efforts on our part to fulfil the target of universal education as early as possible.

All of us are aware that even this commendable but partial achievement in educational expansion has tremendous practical implications and has brought in its wake many problems relating to shortage of teachers, school buildings ultimately of finances. As we are approaching the goal, problems of greater magnitude are likely to arise. No doubt earnest attempts have been made to cope with these problems but the fact remains that inspite of our efforts results of our educational expansion have not been rewarding enough. More serious than the problem of finding resources is the grave danger of quality of education being diluted. If results of examinations at different levels indicate anything, they point to an unhappy state of affairs—to low standards and enormous wastage. There is a point of view that speedy expansion of education is bound to dilute its quality and those who share this point of view would take us to go slow. I am afraid this point of view is not acceptable to modern India. Nor is its correctness supported by historical evidence in other countries. Education in all advanced countries has in the last few decades expanded enormously,

but it has been nobody's serious suggestion that standard of education of these countries has deteriorated because of expansion. Eminent educationists and experts have gone into this question of improving educational standards. I do not propose to dilate upon this, as I do not have the competence to do so. But as a layman, it appears to me that the rock on which our efforts to maintain a high standard of education at different leaves has foundered, is our inability to attract the right type of qualified persons to the teaching profession in adequate numbers. I am afraid that while initiating our programme of educational expansion due care was not taken to ensure quality control of education. The basis of any quality control in education is a competent teacher. In a society where money not only talks out, often shouts, it is futile to expect people with adequate qualifications to join the teaching profession with any enthusiam. So far as the senior teachers are concerned in a situation of rising prices, their principal worry is the solution of the problem of keeping their body and soul together. rather than the problem of improvement of education standard. It is my firm and considered view that the only way to improve educational standard is to make education teacher-oriented. There may be shortages of buildings, equipments and libraries. All these shortages can be made up if there are competent and qualified teachers; because in the ultimate analysis education is what a teacher teaches. I would, therefore, earnestly placed for a substantial improvement of the pay scales of the teachers, which will attract the brighter section of our university products to this honourable profession.

We in Assam, with our limited resources, are trying to improve the pay scales of teachers in primary and secondary schools. I hope I shall be pardoned if I mention those scales here.

The new pay scales of teachers in Assam are :

1. Untrained non-Matric 85-135/-
2. Untrained Matriculated and trained non-Matric 110-165/-
3. Matric trained 125-200/-
4. Selection grade for 10% of teachers with the qualifying service of 20 years ... 165-200/-

5.	Intermediate passed	140-275/-
6.	Graduate teachers of High Schools ...	200-600/-
7.	Asst. Headmasters of High Schools ...	250-700/-
8.	Headmasters of High Schools	350-925/-
9.	Asst. Teachers with Master's degree of Higher Secondary Schools	300-800/-
10.	Headmasters of Higher Secondary Schools	450-1000/-

Persons drawing salaries of Rs. 250/- or below per month will get a Dearness Allowance of Rs. 10/- per month. I may add that the Government of Assam has given these pay scales entirely with its own resources, as the preferred help from the Union Ministry of Education of 50 percent of the expenditure in this behalf could not be availed of due to the fact that it is included within the plan ceiling for education for the State. This would have meant curtailment of programmes of educational expansion which we could not afford to do. We have also abolished the distinction between the Government High Schools and Aided High Schools so far as pay scales of teachers are concerned. We hope to bring about a parity in qualifications and service conditions between the teachers of these two categories of schools. I have no boubt in my mind that if we can solve the basic economic problem of the teachers, they will be able to solve the problem of educational standard. Education in the modern world is an investment and not merely an article of consumption. If our investments in education have not given us proportionate dividends, it is because our investments have been both inadequate and lopsided. In this connection, I would suggest that the different organisation of teachers may also study the problem of deterioration of standard of education and take necessary measures for its improvement. The Teachers' Associations have no doubt the responsibility of trying to improve the lot of teachers; but they have also a special responsibility of imparting better education to their pupils. If they take a hand in this matter, educational improvement is bound to be speeded up.

There cannot be any doubt that reasonable emoluments will free teachers from financial worries and enable them to devote themselves to their duty. It will also accord them a status and dignity. Nevertheless, they will be greatly handicapped in discharging their responsibilities unless they have

proper training in method of teaching and knowledge of the subject they are expected to teach. I am afraid that period of training both at the primary and secondary levels is much too short to give them the necessary training. As far as I know, the course of training for secondary school teachers is of one year and for primary teachers it is for one to two years. It is difficult to appreciate how adequate training not only in method but also in the contents of subjects they are expected to teach, can be given in such a short time. Even in England, where training colleges imparted training for two years after the General Certificate of Education Examination, the course of study has been extended to three years and it gives training in not only how to teach a subject, but what to teach also. I feel that we should have a minimum period of training for at least two years for secondary school teachers and three years for primary school teachers, without which a teacher will not be well equipped to bear the responsibility entrusted to him. I am aware that such a modification will have tremendous financial implications; but if we want to have competent and qualified teachers, we must be prepared not only to give them good scales of pay, but also to provide necessary training facilities.

In a democratic country which has accepted socialism as its goal, equality of opportunity is the only guiding principle so far as the students are concerned. In other words, every student should have an opportunity to develop his intellectual faculties in accordance with his merit and aptitude. In a country like ours which is committed to socialism, the highest education should be available at the doorstep of the poorest boy if he deserves it. It is known to all of us who are engaged in the field of education, whether as teachers or administrators, that poverty deprives a large number of students of the education they are entitled to by virtue of their merit. Along with rising cost of living, education has became expensive with the result that higher education, particularly technical and professional education like engineering and medicine, is going out of the reach of lower income groups. This has already resulted in a wastage of talents, which a developing country like India can ill afford to lose. The answer seems to be increasing the number and the value of merit scholarships in order that poor meritorious students can study without unnecessary worries. As traditional hostels attached to institutions of higher education are

expensive and are likely to be more expensive in the near future, cheap hostels should be started where students from poor homes can do their household chores themselves and keep down their expenses of lodging and boarding. Such a scheme of "talent-salvage" will enable the right type of boys and girls from poor homes to go in for higher education in larger numbers. This is bound to improve the standard of education in our schools and colleges and facilities the emergence of a real meritocracy. Apart from scholarships, arrangements may be made for giving special assistance to poor and meritorious students in the form of book grants and financial aid for admission and examination fees. This is a responsibility which can be shared with the government by private charitable agencies. Supply of free text-books through book banks also will go a long way to help such students.

Education is also intimately connected with social justice. Certain parts of the country, for historical and geographical reasons, have lagged behind other parts in education and they today constitute educationally and therefore socially and economically depressed areas. A special plan for uplifting these depressed areas is urgently called for. There is no doubt that there is provision in our constitution for special treatment of these territories but the sitution today, with the Chinese aggression at our frontiers, demands an accelerated programme of educational advancement for these people. There has been of late a great deal of demand from these areas for facilities for higher education and specially for establishment of institutions of higher education in their parts of the country. This is a legitimate demand and its fulfilment will create a climate of confidence in those areas. The hill areas of Assam are such areas from where rumblings of discontent have already been heard. Special programme for development of N. E. F. A. is already in hand. The Government of Assam has also taken up a programme of special development for the Mizo Hills and plans for development of other hill areas are also under consideration. Here again, we come up against the problem of resources, both financial and human. As one who is connected with the educational advancement of large areas of this nature, I sincerely feel that if we allow financial considerations to stand in the way of development of such areas, we do so at our peril.

Another depressed sector of education is the education of

women. The education of women is closely linked with the creation of an educational environment at home, which greatly helps children in acquiring proficiency in their studies. An educated mother is a guarantee that her child will be brought up in an atmosphere where education has its rightful place. A study made by the department of Education of the Government of Kerala has revealed certain interesting facts about the influence of the educational status of parents on the percentage of passes in different classes in 26 secondary schools. It has been found that the percentage of pass improves with the educational qualifications of the parents. The following are some of the facts revealed in that report.

Educational status	Percentage of pupils	Percentage of pass
Illiterate	12	28
Studied upto primary level	36	32
Studied upto secondary level	46	56
Studied upto degree level	16	88

Extension of education to women will certainly ensure better educational prospects for their children. If we want to create enthusiasm for education amongst women, we must provide for special facilities and inducements. In such areas where there is social inhibitions for girls and boys to read together in secondary schools, establishment of girls secondary schools is a necessity and to have teachers for such schools it may be necessary to provide residential accommodation for women teachers in rural and semiurban areas. We hear demands for special type of education for girls, but I feel that in a developing and progressive country, men and women will have to do more or less the same kind of job and therefore, there is no case for special education for girls so far as general education is concerned.

In this connection, may I suggest that more women should be drawn to the teaching profession, particularly in the primary stage. I am convinced that women are better suited to teach young children who require special attention, because a primary school teacher has particular interest in the child; whereas in the higher classes of secondary school, the interest is on the subject to be taught. This will mean a special plan

to provide better and larger training facilities for woman teachers.

Student indiscipline has posed before us a problem for some time past. It is only in recent months that we witnessed open and large scale defiance of law and order by students in Orissa. Indiscipline amongst youths in general and students in particular is not so unknown in other countries of the world. This is a sociological problem, which has its roots in the frustration created by difficult circumstances under which modern youths have to live. It is not necessary here to emphasise the enormous difficulties of our students; that there is lack of minimum amenities which are necessary in order that they may carry on their studies, is known to all of us. Nobody can question their right to better amenities and facilities and it is necessary, both for the Government and the universities to see that they are fulfilled. The overwhelming majority of students in India, however, have generally behaved well. But there are a number of professional agitators both amongst students and non-students who for congenital and environmental reasons have become rebels without a cause and it is they who jumped into any demand of the students for removal of genuine grievances and give it an agitational twist. It is, therefore, necessary that professional agitators should be isolated from the rest of the student community. Provision for adequate extra-curricular activities will make the students more constructive and purposeful. Sports, in my opinion, takes pride of place amongst such constructive activities. The old fashioned idea of contradiction between sports and scholarship no longer holds good in modern world. Every school, which comes up for recognition before the department of education or the Secondary Education Board as the case may be, should satisfy that it provides its students with a minimum measure of facilities for sports. The University Grants Commission should ensure that university and colleges provide adequate playgrounds for sports and games to their students.

The N. C. C. both senior and junior, has been helpful in bringing out a sense of cohesion and discipline amongst our students. The almost overnight expansion of the senior N. C. C. during the emergency has been a remarkable achievement. Its rapid expansion has, however, created problems of shortage of training personnel and equipment, which are being solved. I feel that teachers in general and heads of

colleges and schools in particular should take special and personal interest in N. C. C. The new policy of recruiting teachers as full-time N. C. C. officers is a step in the right direction to enable the teachers to have closer contact with the students outside the class rooms. I, however, feel that the N. C. C. should expand considerably at the high school level.

While I have no intention to be involved in a controversy, I feel it my duty to bring it to the notice of this Conference of educationists the necessity of continuing English as a link language among the educated classes of different States as well as among different ethnic groups in a State like Assam. Although I belong to a non-Hindi speaking State, I was educated in a Hindi speaking State and as such I have close acquaintance with as well as respect for Hindi both as a language and a literature. We have accepted Hindi as a compulsory subject of study in Assam and we have also Hindi medium high schools. Nevertheless, the fact remains that retention of English as a link language is unavoidable. We are all in favour of Hindi as an official language for the Union Government, but it will take a long time to do away with the need of English as a medium of communication amongst the intelligensia of the country. Moreover, English at present is our main 'window to the West'; it also enables us to maintain our contacts with the rest of the world, particularly with our neighbouring countries in Asia and Africa. Alongside English, the necessity of learning other foreign languages has become imperative as our contacts with the rest of the world are becoming closer and more intimate. We have in this country long traditions of study of Persian and Arabic, both of which are official languages of a large number of our neighbouring nations. The study of spoken and modern variety of both these languages will be of immeasurable help to us to build up Afro-Asian solidarity. I would, therefore, suggest that every University in our country should have an institute of modern languages as they have in many European countries.

There cannot be two opinions about the necessity of a rational pattern of education, which can mere than anything else help to create a bond of unity among our intelligensia. That the strength of the nation depends upon the sense of unity and solidarity in our people has been understood by

all. The necessity of emotional integration is also appreciated by all, especially in view of the threat of Chinese aggression. May I, however, submit that emotional integration, unless it is based on conscious intellectual integration of the educated classes, is likely to be transitory in character. It is, therefore, a special responsibility of those of us who are engaged in educating our younger generation to instil into their minds a conscious acceptance of Indian nationalism so that they may feel and act as Indians first, Indians second and Indians last.

BANARAS UNIVERSITY

by D. C. SHARMA, *President AIFEA, New Delhi*

I AM GLAD that the academic quarantine in which the Banaras University had been put is coming to an end. I am also glad that the Ordinance, the Amending Act, the Reviewing Committee and the Standing Committee, which would have been dark blots on the name of any academic institution in any part of the world and which unfortunately marred and sullied and blackened the good name of the University, associated with the names of great men like Pandit Madan Mohan Malaviya, Dr. Radhakrishnan, my brother Dr. Amaranatha Jha and Principal A. K. Dhruva, are going to be things of the past.

But the question is : does this Bill mark an improvement on the existing situation ? Does this Bill restore the Banaras University to that prestige, to that high pedestal on which it had stood at one time ? Does the Bill preserve the unique features of the university ? Does it make it really not only a national university—we have so many national universities now; we have so many institutions of national importance.

Does the Bill make this University a University in the real sense of the word 'university', which it was at one time—of international importance and international prestige ? People went to Banaras not only to see the temples of Banaras, not only to visit the ghats of Banaras but also to pay their pilgrimage to this University. Dose this Bill do anything of the kind ? I am afraid the answer to these questions is not very satisfactory.

Recently, the Chief Ministers of our country met in Delhi, which is the home of all lost causes, and said that they must put an end to communalism. On the very next day, our Education Minister, who I think stands for national integration more than anybody else—I pay my homage to him—the very next day our Education Minister brings for-

ward a Bill in this House which puts the seal of approval on communalism in this country. Communalism in politics can be pernicious thing; but communalism in academic matters is a poisonous thing. By saying 'Banaras *Hindu* University' or 'Aligarh *Muslim* University', or something like that, you are sanctifying communalism; you are putting your seal of approval on communalism.

I know when I was a college teacher in Lahore, I used to read the statements of our great Education Minister, Shri Chagla, and I used to feel happy. Even now I feel happy; he has not changed; he remains a nationalist, pure and simple, a thorough-bred nationalist. But I would have expected him to bring forward a Bill entitled 'Banaras University Bill.'

My second point is this. We have our national laboratories. You appoint a Reviewing Committee for national laboratories. The report of that committee is circulated to the laboratories and the laboratories go on improving under the impact of that report. Some persons from abroad come to review the work done by them; some persons from our own country also join hands with them, and that is how it is done. Why is not a Reviewing Committee set up to review the working of these Central University education in the country ? Why don't you have a comprehensive, all-round, all-embracing Reviewing Committee to review their working ? Delhi University goes its own way, Banaras University goes its own way, Aligarh University has own path, Visva-Bharati has chalked outs its own course. Of course, I want them to do so. But why should there not be a Reviewing Committee to show to us why these Central Universities are receiving the most-favoured-nation treatment at the hands of the Government of India ? This is what ought to have been done.

I know the Hon. Minister of Education will see to it that periodically the work of these universities is brought under some scrutiny or review so that you need not have ordinace when any emergency occurs, you need not pass any amending bill when any crisis occurs. That is a thing which should be done, that is a thing which is needed.

Now I want to say one or two things about the Bill itself, its provisions. I come to clause 5 : "To promote Oriental

studies including Vedic, Hindu, Buddhist and Jain studies, to give instruction in Hindu theology and religion and in moral and spiritual values and to impart physical training" I do not know how these two things, physical training and training in theology can go together. Anyhow, the Education Ministry is very wise. It can bring together sometimes incompatible things—there is no doubt about it. But I should have thought that some concession should have been made here to what we call national integration, emotional integration. Something should have been done here to show that it is not going to be a Hindu island in a nationalist India or a Muslim pocket in a nationalist India, but that it is in a way integrated with the rest of India. Unfortunately, that has not been done. I feel very unhappy about it.

Then I come to the new clause 13 (b) under clause 5, which reads: "with the approval of the Central Government to borrow on the security of the property of the University money for the purpose of the University;" Has our Indian Government gone bankrupt, has our Indian Government gone insolvent, that it cannot give enough money to a university like the Banaras University, and that it has to borrow money in order to manage itself on the security of its property ? I think this university is not a limited bank, it is not a business house, it is not a commercial undertaking, it is not like the State Corporation in Foodgrains, that it should be able to pledge its property for the sake of managing itself. I think this shows in what commercial spirit this Bill is drafted, in what unacademic spirit this Bill has been brought forth. I think a thing like this should not be there. I do not think this is to be found in any Bill of any university with which I am acquainted, and I think it should not be here also.

I know of some universities which besides their own departments, have, one hundred or two hundred colleges affiliated to them, and even there I do not find so many officers as this residential university is going to have. It is going to have a whole batallion of officers, a whole army of officers, Chancellor, Pro-Chancellor, Vice-Chancellor, Pro-Vice Chancellor, so many officers. What are they meant for ? Why can't they take a lesson from a university like the Punjab University or other universities. Do they have so many officers ? No. This university is going to be made a

paradise for retired people, for people who want to have some kind of service there, and I take strong objection to this large unjustified, inexplicable multiplication of officers in this university.

* IMPROVEMENT IN SECONDARY EDUCATION

by P. D. SHUKLA, *Joint Educational Adviser, Government of India*

IT GIVES ME great pleasure to be with you in this meeting of the Federation. I am thankful to the organizers for giving me the opportunity for this contact. "Improvement of the standard of secondary education", which you have selected for discussion, is undoubtedly very appropriate and opportune.

Need for Improvement

In the growth of education in India, a level has been reached when special attention needs to be paid to quality and standard of education. This is true of all stages of education and particularly of the secondary stage. Secondary education which influences both the primary and university stages by supplying teachers to one and students to the other, is the most crucial stage of education. The significance of secondary education also lies in the fact that it provides a large number of middle level workers to industry, trade, commerce, agriculture and many other phases of the country's economy and development as well as a big sector of self employed persons who have under them areas of influence in election and decision-making.

Progress since Independence

Since Independence, there has been considerable progress in education in quantitative terms. The number of secondary schools has risen from 5000 in 1947 to 20,000 in 1964, giving an increase of 300 per cent. The enrolment at secondary stage (age-group 14—17) has risen from 9 lakhs in 1947 to 45 lakhs in 1964, giving an increase of 400 per cent. The teachers working at secondary stage have similarly risen from 0·5 lakhs to 1·5 lakhs, which means a rise of 200 per cent. The teacher training colleges in 1964 were 250, and the corresponding figure in 1947 was 50. This means an increase

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* Presidential address at Secondary Education Section 36th AIFEA Conference, Indore.

of 400 per cent. As for expenditure, the whole country had incurred in 1946-47 a sum of Rs. 60 crores on education. The corresponding figure in 1964 is estimated to be Rs. 480 crores, *i. e.*, a rise of 700 per cent. These are only some of the indicators.

Standard of Education

What about the standard and quality of education ? These depend, at any place and time, upon a complex of many factors. The latter include the teacher, the curriculum, the textbooks and other reading material, the science apparatus, equipment and teaching aids, the school programmes, the supervision and inspection, the evaluation, the guidance counselling, the buildings and furniture, and even the students.

The Weaknesses

In our case, about 34 per cent of the school teachers today all over the country are without any professional training. This percentage varies from area to area, and in Assam and West Bengal 30 per cent and 50 per cent respectively of the teachers are untrained persons. Studies recently conducted in Maharashtra, Punjab, U. P. and other places have revealed that 70 to 75 per cent of enrolment in the secondary training colleges comprises III divisioners. The mid-Plan appraisal, done last year (1963), has revealed that the average teacher-pupil ratio has been decreasing, and now it has come down to 1:30. This has to be compared with 1:22 which has established itself, through experience, as the lowest permissible ratio. With the existing ratio, the average class strength will be about 45.

Knowledge in science and many other disciplines is growing at a very fast rate. This necessitates a great deal of attention to the reconstruction of our curriculum and teaching methods, production of reading and reference material, and reform in evaluation techniques. Is that happening as required ? A review of the syllabus was done in 1954 to introduce the scheme of higher secondary schools. But this has so far affected only about 25 per cent of the schools. The remaining secondary schools are still following the old curriculum, prepared long ago, with little change. Similarly, the welcome change in the medium of instruction and

examination from English to regional languages has been brought about. But more serious attention needs to be paid to produce books of the requisite standard and in the required variety and numbers. In some of the practical subjects introduced in our multipurpose schools, there are practically no books in Indian languages. In the same way, considerable improvements have to be made in our evaluation methods; the present rate of change is very slow.

The average number of working days in our schools is 175–180 out of 365 in the year. There are several countries in the world where the schools work for 240 and 250 days in a year. So is the case with the number of working hours each day. The junior technical schools work for more than 1500 hours per year, while the corresponding figure for general secondary schools is only about 1200. That is why an important change in this direction is being brought about after the 1963 resolution of the Central Advisory Board of Education which has recommended that the minimum number of working days in a year should be 220, with a minimum of 1100 hours of *instructional* work.

Science of the elective standard has been introduced in about 8000 secondary schools. It is, however, found that nearly 66 per cent of these schools are without adequate laboratory equipment. Condition of the school libraries is similarly very poor. Many schools have little or no provision in their annual budgets to add new books or replace old or worn-out ones in their libraries. Few schools in the country have full-time and properly qualified and trained librarians. The availability of other teaching aids like maps, charts, globes, and demonstration material is equally weak. It is observed that only about 10 per cent of secondry schools in the country own their own film projectors; the position with respect to the filmstrip projector, although it is cheaper, is no better.

In the matter of buildings also the condition is not fully satisfactory. The buildings of many of the older schools have been in use without adequate repairs. The enrolment in many of these schools has increased several times without corresponding extension to the building and increase of the furniture. Many new schools have been started recently without adequate provision for physical facilities. In the capital of India itself, many schools have been running in tents.

Since Independence, we have made serious efforts to reach educational facilities to all parts of the country and particularly to the rural, neglected and backward areas. This has brought to our school children from diverse social and economic background. The Indian system of education, however, dose not yet provide sufficient variety of courses to suit the aptitude and capacity of various groups of children nor the guidance counselling in adequate measure to help them choose right subjects and find training facilities and avenues for suitable careers. The present provision of freeships, scholarships and stipends also considerably falls short of the needs.

Wastage in Education

What is the result of all these deficiencies and inadequacies ? The answer is the general lowering of educational standard and the wastage of effort. Take, for example, the achievement of pupils in their examination, which is a tangible and measurable situation. A study of the examination results has revealed that on an all India basis approximately 50 per cent of the pupils, who take the examination at the secondary stage, fail. This figure varies to some extent from State to State, and in one or two States as many as 65—70 per cent have recently failed in the school leaving examination. This indicates the tragic waste in human resources and expenditure incurred in our schools. We must analyse the problem, find out what is our responsibility in the matter and determine what we should do to avoid this heavy wastage in education.

High Priority to Quality

The cumulative thinking in connection with future development of education in India has emphasized that during the Fourth Plan high priority should be given to improvement in the quality and standard of education. What should be done towards that objective is the subject of consideration and examination by the planners and policy-makers of the country. The deliberations of this Conference of classroom teachers and other educational workers will, therefore, be of great value and help in taking decisions and finalizing the next Plan.

Measures towards Improvement

The role of a teacher in the educational process is so vital and crucial and so much depends upon his ability and character that it is one of the first concerns of the State to see that educational institutions are enabled to recruit the most competent teachers and to retain them by paying adequate salaries and creating appropriate conditions of work. There is no difference of opinion about grant of higher salary scales if these are aimed at attracting to the teaching profession persons with better qualifications. In the case of working teachers, however, it has been suggested that higher emoluments should be linked with improvement in qualifications, training and experience. Many avenues for further education and training of teachers already exist and several others in the form of condensed courses, correspondence instruction, summer institutes and refresher training are proposed to be organized. In a developing country in Africa, which I visited recently, I found that it was obligatory by law on every school teacher to attend the short training course organized during summer vacation each year. I think in India also each school teacher should, as a rule, participate in at least one course of further education or training during every period of 4 or 5 years. In this field the teachers' organizations have an important role to play. In the matter of their professional growth, they should not look to government to do every thing. The organizations of teachers in the U. S. A. and the U. K. are living examples in this connection.

As for government, I may say that the work relating to teacher training—both pre-service and in-service—is receiving great attention. It is emphasized that the output of trained teachers should equal the reqirement so that no untrained person has to be recruited as a teacher. To clear the backlog of untrained teachers, correspondence courses are proposed to be organized both for primary and secondary school teachers. The recent conference convened jointly by the Association of Principals of Training Colleges and the National Council of Education Research & Training has made several recommendations for improving the training of teachers. It has been stressed that training colleges should be comprehensive in character, providing facilities under the same roof for training teachers of elementary and secondary schools as well as special teachers. The enrolment

in these colleges could be 300—400. This size will make the college more economical without any loss to standard of training, it will create a more favourable professional atmosphere and it will be able to secure the services of specialist teacher-educators on full-time basis.

Particular attention has to be paid to the training of teachers of Science, Mathematics and English. With the help of Science Faculties, of selected universities, condensed courses of one year's duration are being organised to train existing graduate teachers of Science and Mathematics to handle higher secondary classes, where the prescribed qualification is a post-graduate degree, Several such courses have already been started and more will be added according to need. The Central Institute of English at Hyderabad and the Regional and State Institutes of English at Bangalore and other places are providing facilities for training and re-training teachers of English.

The four Regional Colleges of Education (at Ajmer, Bhopal Bhubaneshwar and Mysore) will now provide teachers of the vocational subjects introduced in secondary schools. These will be expanded and strengthened during the Fourth Plan. In addition, training will have to be arranged for a large number of teachers of Agriculture and Science, which are proposed to be introduced in a big way in our secondary schools during the next Plan. Similarly, the scheme of Extension Departments of the teacher training institutions may have to be developed further.

The Central Government has taken up the production of model textbooks, handbooks and work-books for all classes at the school stage. These are being written by teams of people who are specialists in their subjects. These will be given to the States to be adopted or adapted and printed in the regional languages. Through several schemes of award of prizes to authors and guaranteed purchase of a specified number of copies, encouragement has been given to the production of supplementary reading material for children and adults. However, it is necessary to take up larger production of books in Indian languages both through translation and original writing in order to meet the needs of the increasing population in our schools and the new reading public. These should also include books of reference for the teacher.

While there is a case for general revision of curriculum in all subjects in order to add newer knowledge to it and replace the "dead wood", special attention needs to be paid to Science and Mathematics to meet the requirements of the times. It is necessary to make the teaching of general science compulsory throughout the school stage so as to spread scientific literacy in the whole nation. This, of course, has to be in addition to the provision of elective science of a higher standard for those who have the aptitude for it.

Equally important and urgent is the need to diversify secondary education in the country. We had inherited at the time of Independence a "single-track" system which provided preparatory courses for admission to colleges and universities. That system will served the purpose at a time when education was confined to the *elite* and there was little development in industrial and other sectors needing a varied kind of man-power. The situation has changed completely after Independence. This necessitates diversification of secondary education both horizontally and vertically. A beginning in this direction has been made through the establishment of multipurpose schools, junior technical schools, and other vocational schools. The total enrolment today in all these is hardly 10 per cent of the entire school population at secondary stage. There are countries where as many as 40 per cent of secondary school pupils are enrolled in vocational or semi-vocational courses. Such courses have therefore, to be expanded in our case also to admit more pupils. Agriculture being the main industry of the country, special attention needs to be paid to agriculture education. All these vocational courses should be job-oriented and terminal in character with provision of adjustment courses in academic subjects for the select few who wish still to go for higher education and have the capacity to benefit from them.

Libraries of our schools have been sadly neglected. The school libraries and their service need to be considerably strengthened. They constitute a potential means to improve the teaching of all subjects in the school. These libraries should, of course, be supplied with varied literature of interest to the pupils; but what is most essential is to provide them with a suitably qualified and trained librarian. It is he who

can make proper selection of the books, organize an effective library service and encourage reading habit among the pupils (and the teachers). To make this possible, it has been provided that the school librarian should be a trained graduate with training in library science, and he should, therefore, be given the grade of a trained graduate teacher with a special allowance. It is proposed that schools with higher enrolment should have full-time and others part-time school librarians but all in the suggested scale and with the prescribed qualification. Organization of suitable training courses in school librarianship has been given a place of higher priority.

Needless to say that education of a child is not complete unless all his faculties, including physical, social and emotional are suitably developed. His growth will not be balanced otherwise. A good provision should, therefore, be made in our schools for manual work, sports, games and other co-curricular activities. And these should constitute an integral part of the school programme.

Efforts to raise the standard and quality of education cannot succeed fully without an adequate strengthening of educational supervision and administration. The supervisory agency has, of course, to be of a size which can cope with the expansion of education. But, there are two directions in which the greatest strengthening is called for. It is felt that every district should have a permanent panel of subject inspectors in addition to the general inspector or education officer. Further, modern thinking emphasizes training of all kinds of personnel, and so our authorities concerned with educational supervision, and administration should also be enabled to refresh their knowledge and techniques periodically like the teachers.

Peaks of Excellence

While there is need to improve the working of all our schools to the highest attainable standard, it may not be practicable to do so immediately within the available resources of finance and man-power. A more rational and planned approach may, therfore, be to raise the standard of all schools up to a minimum norm, and to slect a few and develop them as "peaks of excellence". These schools may be given the most competent principals and teachers working

in the State, a higher teacher-pupil ratio, better provision of physical plant, science laboratory, library, and teaching aids. The inspectorate should pay special attention to them. They should be residential in character, since each of them draw pupils from large areas. Admission to these schools should be purely on merit. They should have adequate provision of scholarships and freeships so that no meritorious student is handicapped because of financial difficulties. These schools should also have freedom to experiment, although they should prepare students for the same public examination as other students in the State. They should be our best schools in the country and should charge ordinary fees so that their facilities can be fully availed of by people of ordinary means. Such schools should be well distributed all over the country.

Finally, I should like to emphasize the experience we have now gathered from the preparation and implementation of three successive plans. We started as inexperienced planners, but we have now learnt many lessons in planning. The most important, to my mind, is the fact that in education it is as difficult to spend the money well as to find it. We have to stress continuously maximum utilization of the available resources. It will be purposeless and it will only lead to disappointment and frustration if we go on asking for the ideal conditions. What is most fruitful is to make the best of what is available—funds, material, time and other facilities. Our schools should work for more hours each day. Our academic session should be longer. The use-coefficient of the educational building, laboratory and library should improve. The craft and manual work in our educational institutions should be more productive in character. Our teachers should be able to prepare and repair simple apparatus of science and other teaching aids. In short, every possible effort should be made to secure greater return to the nation out of the resources spent on education.

* SOME PROBLEMS OF HIGHER EDUCATION

By RAMANI MOHAN ROY, *Principal, Surendranath College, Calcutta*

I AM GRATEFUL to the Council of the All-India Federation of Educational Associations for asking me to give this year's Seshadri Memorial Lecture. I feel it an honour and a privilege to do so. Principal P. Seshadri was well known as a poet, speaker and teacher of English, and won recognition in the national and international fields as a worthy exponent of university education in India; but his memory will be ever cherished for what he did for founding this All-India Body in order to forge unity among teachers of all categories all over the country and imbue them with the spirit of dedication to the cause of education and service to the nation. Meeting at a place not far off from Ajmer which was the scene of Principal Seshadri's activities during the last ten years of life, members of this conference will, I am sure, feel the play of a living magnetism of his ideals in all the proceeding.

Introduction :

For one speaking to academic persons it is difficult to find something fresh and useful to say on academic matters. I am afraid that you will find in this address only echoes and even reiterations of views that are well known, and I hope that you will bear with me if some of my views differ from decisions of relevant sectional committees of this session.

As Shri Aravinda observed in 1908, "This is the age of the people, the million, the democracy. If any nation wishes to survive in the modern struggle, if it wishes to recover or maintain Swaraj, it must awaken the people and bring them into the conscious life of the nation, so that every man may feel that in the freedom of the nation he is free." It was recognised that the only way of awakening the people was by spreading education among an ever-increasing proportion of the population. And when freedom came this was one of the first tasks that Independent India took up in right earnest. Commissions were set up for University Education. Secondary

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* Sheshadri Memorial Lecture at the 39th AIFEA Conference, Indore.

Education and Primary Education. The order in which these Commissions were appointed has often been adversely commented upon, it was like building a structure from the top to the base, critics remarked. It has to be realised that to build a machine it is necessary first to get up the tools and to sharpen them. An efficient and dedicated band of teachers for any stage of education can only come from among the products of the next higher stage.

The goal and the philosophy of a national system of education suitable for India have been discussed by the University Education Commission (1948-49) and the Committee on Emotional Integration (1962), and they need not delay us long. As Mathew Arnold wrote : "Its (education's) prime direct aim is to enable a man to know himself and his world." This applies with equal force to modern India. Even in a technical age so necessary for modernisation of our society, the Indian youth must not be concerned only with Time, Matter and Space, but must be encouraged to choose the pursuit of Truth, Goodness and Beauty. And he must be taught to adjust himself to his world, —which is a developing society wedded to the ways of democracy, Secularism and integration among multi-racial, multi-lingual people professing different religions. For establishing this feeling of oneness all countries have turned to the teachers. How far this integration can be brought about by college and university teachers who can contact but few, and how far the task should be taken up by the teachers in earlier stages who can influence larger numbers will no doubt be determined by the new Education Commission : it will be for them not only to re-examine the goal of education in general but also to define the same separately for each stage of education.

Standards of University Education :

I should think that I may best plunge into the subject of college and university education by taking note of the loud and persistent criticism that standards have been noticeably, and even alarmingly, going down. The criticism has been so wide spread that the University Grants Commission appointed a Standards Committtee in 1961 under the chairmanship of late Prof. N. K. Siddhanta (and later of Shri S. Govindarajulu). It is for the same reason that the Central Ministry of Education has appointed an Education

Commission; this commission will assess the needs of all the different stages of education. It is for the first time that one Body has been entrusted with this work of formulating a scheme of Education as a whole, and it is certainly a move in the right direction; standards cannot be improved at the university stage unless the foundations for improvement be laid at the primary and the secondary stages.

What is the point of reference when critics speak of falling standards? The percentage of failures averaged over all the Universities in 1961 was 53·6 for the B.A., 54·7 for the B.Sc., and 53 4 for the B. Com. examinations. The figures are distressingly high, but equally high percentages of failures at the Intermediate examinations were noted by the Radhakrishnan Commission for the years 1944-48. The percentage of third divisioners among the successful candidates was as high in 1944-46 as it is now. The standards were never 'good' and call for remedial measures, but judged by these criteria standards cannot be said to have gone down.

Obviously then critics refer to standards of attainment of first and second divisioners. It would be a vain endeavour to define any yard stick by which absolute standards may be measured. Employers, including Government departments, judge standards only by the candidates' knowledge of English, and they rightly think that standards have fallen; others hold that students have deteriorated in their power of expression in any language; some judge standards by the quantum of knowledge possessed by the students and hold that standards have actually risen particularly in the field of physical sciences. Standards may also be judged by social awareness, general culture and maturity of judgement reached by the student or his capacity to undertake original research work, and the assessment of teachers of modern standards form these view points vary between opposite extremes. Some are of opinion that standards have fallen and are still falling, that comprehension, appreciation and expression have all deteriorated; that is so far each and every subject, and even at the post-graduate level. Others hold that present-day students are more knowledge-minded; the percentage out-turn of good students remains the same; I. Q. of present-day students is not lower, it is not actually higher than it was 15 years ago; the extent and quality of course-contents are now superior, and that being so, similar

performance in examinations implies better calibre of present-day students.

The Union Public Service Commission finds (Seventh Report, pp. 5-6) that the standards of canditates are generally low, so far as grasp of their subjects and development of personality are concerned; but they report that in the Central Services were found a number of bright young men whose personality and mental qualities are of a high standard. Another high Selection Body for recruitment of scientific personnel find that the standard of candidates is generally low, and that M.Sc.'s are not generally better than Hons. B.Sc.'s (-a finding that I shall comment upon at a later stage-); but the selected candidates all shaped well after a few months' training.

Much of the criticism about falling standards is thus uninformed and in any case is not applicable to every stage and every class of university students, or to all departments of a university. The actual picture is indeed one of light and shade. But in education, a few talents shining while the rest is darkness, cannot be our objective. We must therefore take up the question of improving standards with the utmost sense of urgency, not because they have been falling but because they have never been satisfactory.

In education there can be only one standard, the international one. It has to be recognised that even before World War II our standards lagged considerably behind those of other advanced countries; since then those countries have taken great leaps forward so that the gap has widened. We must, however, pause awhile to make an objective assessment. The attainments of our students at the age of 20 after 14 years of education or at the age of 22 after 16 years of education are held to be comparable with those of students of advanced countries, age for age; if, therefore, there is hardly any equivalence in the degrees held by them, it can only be due to the difference in the length of schooling leading to the degrees, and more so to the difference in the standards of the course-contents. Our engineering graduates are found to be inadequate to man the many Engineering Projects without the help of foreign experts; but it has been found that once they have learned the technical know-how in a few months' time they have competent to take up independent charge. That only shows that the deficiency

lies in *What* we teach. Again, students going overseas at any stage of education are found to compete on equal terms with their counterparts in those countries. Our standards of curricula and of teaching need to be improved more than a mere copying of the educational *structure*. This is forcefully borne home when we find that in 1961 the failures in B. Sc. (Eng.) and M. B. B. S. Exams.,—where only the best students are admitted after rigid tests and/or interviews, were as high as 26·0 and 43·8 respectively.

Student Enrolment in Universities :

It is therefore of primary importance to find an adequate number of competent teachers. During the post-independence era the enrolment in our universities has increased faster than the provision of additional teachers. While the total enrolment was 2,65,917 in 1947-48, it rose to 6,51,479 in 1954-55 and 12,72,666 in 1962-63, In absolute numbers the enrolment cannot be said to be too high; even now it is only 3 per one thousand of population, of which about 41 percent are in pre-university, intermediate and pre-professional classes, and thus there are only 1·23 students in the first Degree or higher classes (against 5 in the U. K.).

On the other hand it has to be recognised that a university in our country has to take care of 23,500 students in pre-university or higher classes (about 14000 of them being of the true university standard), against about 8000 students for university in U. K. It is true that in America and in England an increase in the size of universities has not led to any low quality of products, but this is because of their unlimited resources.

Again, while it has been estimated that the student enrolment will double itself in about 20 years in the U. K. and in 10 years in the U. S. A., it has doubled itself in India in 9 years between 1954-55 and 1962-63. Teacher-members cannot rise so rapidly, and consequently the staff : student ratio cannot be improved.

The complexity of the problem is increased by the fact that a sizeable proportion of our present-day students come from families with little or no educational or cultural backgrounds. The educational authorities have therefore been thinking in terms of restricting University education to those who are most likely to profit by it. A similar proposal of

restricting university admission to "aristrocracy of intelligence" was made during the British regime in 1937; it was stoutly resisted even at that time. In a new democracy it is sure to be suspected as an attempt to perpetuate the imbalance in our society and to keep down the backward classes permanently in the backward position. Steps have to be taken to resolve the conflict between the democratic urge and the educational sobriety.

What are we going to do with the rejections ? The Radhakrishnan Commission, and educationists in general, have recommended that an adequate number of craft schools, and technical, technological and occupational institutions should be opened all over the country so that every student of the age group 15+to 18–may be in some institution of his choice and which is suited to his aptitude, ability and resources. This may siphon off a large proportion of school-leaving boys provided there is an assurance of equal opportunities of employment afterwards, but it is apprehended that Indian economy may not reach a 'take-off stage' within the next 10 to 12 years to make such an assurance possible. To the same end there must be diverse other opportunities for employment for boys of the above age group.

As is well known, all students who have passed a Higher Secondary examination or Pre-University or an equivalent examination are eligible for admission to the 3-Year Degree Course. It does not mean of course that all students who possess the minimum qualifications are able to get themselves admitted to any college/university they like. Selection is made on the basis of their performance in the qualifying Public examination. The question has been raised whether in view of the defects of our examination system there should be a separate entrance examination conducted by the university or by the colleges. The new Education Commission will no doubt be able to remove or minimise the imperfections of the H. S. or S. F. examination: if thought fit, there may be two kinds of examination (though it would add to the complexities), one for those for whom it would be terminal education and another for those who want to pass on to higher education, but a student should not be required to take both the examinations, one after the other.

Duration of Education for the First Degree (in General Education) :

It has already been stated that there is hardly any equivalence in the first degrees of our country and those in advanced countries. The University Education Commission ascribed this to the shorter span of education leading to those degrees; it was 14 years (10+2+2) in the old system; it is 14 years even now (11+3, or 10+1+3), against 16 years in the U. K. or U. S. A. The Commission therefore recommended that it should be increased to 15 years. This view has been endorsed by the Vice-Chancellors' Conference (October, 1962), Principals' Conference (May, 1964), and at many other conferences and at previous sessions of this Federation I should think that this question requires some objective re-thinking.

This period of 15 years may be broken up either as (i) 12 years of school-education following by 3 years of degree course or, (ii) 11 years of school education followed by 4 years of college education, or (iii) since 60 percent of the schools will continue to be 10 class schools at the end of the third plan period, 10 years of school followed by 5 years of college education (or 2 years in a Junior College and 3 years in a Degree College).

Of these alternatives, the first one having 12 years of school education would not be practicable. First, no State in the country is in a position to complete the conversion of 10 class schools into H. S. Schools with 11 classes, and then to convert them all into 12-class ones in the near future. Secondly, in 11-class schools teaching is being imparted in many cases by Pass graduates who have taken short training for 2 or 3 months. It will not be possible in the foreseeable future to provide in the 12-classes schools M. A. 's and M. Sc.'s for teaching the different subjects in the two top classes.

Our colleges are not equipped to run 5-years courses and here too there is acute shortage of teachers in most of the Science subjects and some Arts subjects. Even in Government Colleges some departments are being run with 40-50 percent, of the sanctioned staff-strengths. And it would be academically unsound to maintain second-grade 2-year colleges, as this would add to the 'casteism' among college teachers. The third of the above alternatives will not therefore be feasible.

Coming to the second alternative, it has been suggested that in the first of these four years there would be a pre-University course to train the students to think for themselves and prepare themselves for college method of teaching. But the defects that have been found in a pre-University course after a 10-years school course would also be present in such a course after 11-year school education.

The question should not, however, be decided by any negative reasonings such as have been given above. It has been stated before that the standards of attainment of our students at the age of 20 (after 14 years of education) are comparable with those of his counterparts in the U. K. or U. S. A., even though the degree is of a lower standard. For most of our students the first degree is the terminal education; it would be more economical to allow them to go out at the age of 20+. One additional year of contact with life, or one year's training for the selected vocation will equip them better for life than one additional year of general education in a college. In the process, the pressure of numbers on universities would be reduced; this would be a significant gain not to be lightly thought of in our present situation. I have already referred to the finding of a Central Selection Body that two year's of P. G. course may teach a graduate more facts, but it does not necessarily increase his intellectual alertness.

Nor need the period be prolonged for those for whom the first degree is a qualifying education; they will have ample opportunities to come up to the M.A., M.Sc. standard of universities in the West, if our postgraduate education be improved to the desired level.

The University Education Commission recommended a 15-years' sp an for education for the first degree, no boubt; but is alsod recommended 16 years of education for the Master's degree for those who graduate with honours and *18 years for the Doctorate degree.* Why should we not aim at ensuring this doctorate degree within the prescribed time limit, rather than accept it only for the lowest level ?

With the course-content for the Degree examination as at present, it is my experience that students do not have enough practical work to do during the three years of the Degree Course. In Chemistry Pass (Cal.-Uni.) for example, there

is 3 months' work, and any lengthening of the period would be unnecessary. I know that we teach the students only the classical methods of analysis: but not to speak of the colleges, even our universities have not the necessary equipments for spectrum and infra-ray methods of analysis, which have completely outmoded the classical methods. I again come to the proposition stated before that if the standards of our students appear to be lower, is it more because the standards of our equipments and facilities are lower. Let these be provided first; improvement of standards cannot come by mere lengthening of a poorily staffed and ill-equipped course.

We should meanwhile try to get the most out of existing conditions. Even in regard to the span of 14 years for the first degree, it should be possible to find at least 180 additional teaching days by shortening the time-lags between the end of a class/course and commencement of teaching in the next higher class-course, and guarding against loss of precious days in political and other forms of turmoil.

Grant far Education :

As Dr. Vidyalankar said here last year, "We have made university education wait and stand much behind many other pursuits in the long queue" claiming the priorities. This is not as it should be; strengthening universities should be the fundamental national goal and university needs should receive the highest priority in the national economy.

I do not propose to quote figures to show how inadequate is our expenditure per college/university student, being only about one-fifteenth of that in the U. K. Obviously the State must find the resources to permit the universities to discharge their duties properly. But we must also be realistic. In most of the advanced countries this cost is of the same order as that of per capita national income; it is nearly twice the per capita income in our country. True, our national income figure is too low and double that amount is utterly inadequate. But there will be an inevitable limit to the fund that may become available, and it will be necessary to shape our educational policies and priorities accordingly.

Proposal of a Modified Education Pattern :

I have enumerated a number of conflicting factors and I should try to strike a balance between them. I would propose

an educational pattern of general education as follows for the consideration of educationist.

The first public Examination—S. F. or S. L. C. or by whatever name it may be called should come at the end of 10 years of schooling. Those that reach a certain minimum standard would be admitted in P. U. class (or class XI). At the end of the year those that are considered fit, by the college, for university education would be allowed to proceed to the 3-year Degree Course (and take the first degree after 14 years of study); the remainder would be diverted to an additional one year's course (class XII) and take a Public Examination, corresponding to the old Intermediate examination but reaching a higher standard, at the end of the year.

The P. U. course may be done in class XI of a school or in a college; since, however, this would lead to class XII or to the Degree Course without any Public Examination, it would better be done in an Institution which has all the courses namely in a college.

The Second category of students would thus have the culturally liberating influence of two years of university education thus satisfying the democratic urge. Of these again, those that reach a certain standard (say, get an aggregate mark of 60 percent or more) will be eligible to proceed to the 3-year Degree course, thus taking the first Degree in 15 years.

Of course there would be provisions for diversion to Craft Schools after class VIII, to professional or Technical Schools after S. F. examination, to technological, medical and other studies either after the public examination at the end of class XII or through a Selection Admission Test (by the Institute concerned) at the end of the 1st year of the Degree Course.

I would like to recall in this connection the view which I have always held and which I pointedly expressed at the Conference of West Bengal College and University Teachers' Association in July, 1955 that there should be sufficient flexibility in the educational pattern so as to ensure that an option exercised at a premature age of 11 to 17 may not be irrevocable. This flexibility should begin from the elementary stage, there being some schools which would give basic education through crafts, while others impart primary

education of the classical type with adequate emphasis on creative mannual work and crafts. Similarly, secondary schools should have sufficient vocational bias, and technical schools, academic bias so that either type of schools may lead to any of the courses at the next stage. Thus, Technical High Schools should lead as easily to general Degree Courses as to higher engineering colleges; and the products of general secondary schools should be able either to go in for higher courses at the university level, or to start even a technical career after a brief period of apprenticeship in appropriate establishments. Nor should this be difficult, since technical institutions should be concerned more with the teaching of fundamental principles than with the teaching of precise skills–which in a techincal age change rapidly and are therefore better left to the factory.

Medium of Education :

We know that this question has raised a better controversy in the political circle, but speaking here in an educational conference we should be guided only by academic considerations. The views of National Integration Council (June, 1962), Vice-Chancellors' Conference (October, 1962), and of the U. G. C.'s Review Committee on English would be relevant in this context.

A boy does his school course in his mother-tongue or in the regional language. It would be logical and be of great advantage to him if he can do the same throughout the university course and in any case, upto the pass stage in the Degree Course. This would give him more time for independent thinking and enable him to do more in a given time. This reform should be introduced *immediately* without waiting for preparation of suitable books in the language concerned.

On the other hand English will continue to be an international, and also to a great extent a national link language for a long time yet. More important still is the fact that university students must be able to refer to original English books. I should stress the obvious point that to be able to read (say) Chemistry through the medium of English at the First Year Degree Class, a student must have learned English prior to that stage : study of English *pari passu* Chemistry does not serve the purpose. Study of English must therefore

be begun early in the school course (say, in class IV) and taught efficiently so that the student may be able to read and express himself with reasonabe ease and felicity by the time he completes Class XI. Makeshifts like making special efforts in the P. U. class or class XI, or in between the different terms of the First Year Degree Class, will not be effective.

The Present P. U. Course :

This was introduced only as an expedient measure, but it will have to be continued so long as 10-year and 11-year class schools continue side by side. It has been assailed on the ground that with a university education at the end of the course and with interruptions due to vacations etc., the course is of hardly 5 months' duration. It was through that it would not be possible to cover the course in so short a period, it has been found that the fear was unfounded. But the course ends even before the student has found his feet and has had time to get used to the lecture-method of teaching in colleges.

The remedy is to rationalise the system by having the same courses in classes VI to X in both 10-class and 11-class schools (in West Bengal this reform has already been introduced from the lower classes and would soon extend upto class X). In the P. U. class the student will then have to do only the course done in class XI of a 11-class school. It is true that even then the student will have about 4 months less in P. U. class than in class XI; but it would be more than made up by the teaching being imparted by more experienced teachers.

It may be stated that in my Scheme put up earlier I have recommended that there would be one Public Examination after class X and none after class XI or P. U. class.

While on this subject I would throw out the suggestion that the number of subjects for the S. F. examination should be reduced to not more than 7 (of which the regional language, English, and Sanskrit or Hindi, would be compulsory for all), and that there need be only two streams-Humanities and Science. For technical, agricultural and other streams there may be separate institutions. It is firmly believed that with these modifications it would be possible to reach upto the old Intermediate standard at the end of the

11th year, and this in turn will make the 3-year Degree course more fruitful.

University Courses :

I would make hurried references only to a few points under this head.

Universities should run both Honours and Pass courses. This would provide for undergraduate education of a higher standard for better students and would also be a preparation for postgraduate study in the major subject. Some universities are of opinion that high specialisation at the first degree level is not desirable even for the more gifted students. But the honours course as conceived by most universities, with studies at the general level in usual pass subjects and more extensive and concentrated studies in one of them is hardly a highly specialised course.

While the honours degree would be a natural passport for the post-graduate course in the subject of specialisation, it is desirable to make the P. G. course avilable to those who show special ability in the general course. It is, however, doubtful how far this will be practicable in a university which cannot admit even its honours graduates.

This pressure of numbers for admission into P. G. course can be solved to some extent by partial decentralisation of P. G. education and recognising some of the good colleges within certain territorial limits as constituent colleges for giving P. G. education. This would save the selected college from stagnation and would stimulate the other colleges to reach up to the requisite standard.

REORIENTATION OF HIGHER EDUCATION

This is true that all kinds of education play a constructive part in increasing economic welfare, but scientific and technical education does so more quickly and directly. As the Education Reorientation Committee of this Federation emphasised, the resources of this country in materials and trained personnel has to be improved at a much higher tempo than envisaged before; inevitably the greater part of our scarce financial resources must be devoted to scientific, technical and engineering education.

There are people who deplore that his emphasis on utilitarian education defeats the true ideas of a university. Educationists are conscious of the need to ensure that educational bias may not become lopsided; they are conscious of the danger even in technology and science of the prestige associated with study and research in one subject becoming too high to the comparative neglect of other subjects which are vitally important to the country. Dr. D. S. Kothari put it pithily– "If building of pyramids is considered more important than improvement of agriculture, then the best men become pyramid designers rather than agricultural scientists. This happened on the banks of the Nile thousands of years ago and one of the greatest civilisation of antiquity got entombed in the pyramids at almost the height of its glory."

Keeping all these in mind, it will be found (Tables below) that our enrolment in the Science and Technology still lags far behind Humanities (this, of course, for lack of facilities) and our supply falls far short of the requirement.

	India : 1962-63 % of Total enrolment	U. K. : 1960-61 % of Total enrolment
Arts (including Commerce, Teachers' Tr., Law)	57·4	43·9
Science	30·4	24·3
Engineering and Technology	5·4	15·0
Medicine	3·9	14·00
Agriculture	2·5	1·9

Faculty-wise percentage enrolments in certain countries (1959) were of the following order :

	Arts	Science	Engineering	Medicine	Agriculture
India :	60	30	4	3	2
U. S. S. R. :	46	..	33·5	8·5	11·5
U. K. :	42·5	23·5	15	16	1·5

Again, nearly 20,000 engineers go out to work every year in U. K., whereas 8262 Engineering Graduates and 12,227

diploma-holders are turned out every year in India with 10 times the population of U. K. The Education Reorganisation Committee of this Federation rightly emphasised that our universities should turn out *at the University level* 3 times as many engineers and 5 times as many Agriculture and Animal Husbandry experts.

New Colleges :

Existing colleges should first be consolidated before new ones are opened. The power of granting affiliation should be vested in the universities, and academic needs and academic tests should be the sole factor and there should not be any pressure from the State or from other quarters.

Colleges cannot be run now without government assistance. Government should declare ahead the *number* of new colleges it can hope to finance during a specific period; and the university should then survey the regional needs and determine *in advance* where the given *number* of colleges may best be located, and finally decide between the different applications coming from a given region. This will go a long way to eliminate non-academic considerations. The university should watch that proper academic conditions are maintained in the college, and adequate resources are made available to its smooth and efficient working. The university should also take the initiative to bring about such co-ordination among colleges and between the university and the colleges as will prevent wasteful duplication of efforts in the teaching of subjects which are not in much demand, and will result in the betterment of teaching imparted.

The university should have the statutory power to take adequate measures against a praticular college *in extra-ordinary circumstances* in order to set matters right. Normally, however it must respect the autonomy of the colleges. In fact in its relation with the colleges the university should be watchful observant and helpful, powerful but not obtrusive.

New Universities :

A young Democratic Republic will have to open new universities to meet the ever-growing requirement of student-places in the sphere of higher education. If planning is *desirable* for opening new *colleges* it is *essential* for setting up new *universities.* There should be careful consultations among

the Central and the State Education ministries and the UG C. regarding assessment of the academic need, availability of financial resources, and possibility of getting adequate teaching personnel without adversely affecting existing universities. The wisdom of having two or more universities even of different types, in the same city is always open to question.

It should be the duty of the U. G. C. (or some other authority) to ensure that there may be an inter-university "division of labour", which will increase the efficiency of teaching of each university by keeping down an unduly wide dispersal of whatever talents we have in a particular field; in their enterity it will be possible to ensure that India will not have to look to any country 'for intellectual food and sustenances'. This is only an extension of the scheme of "advanced centres" at an earlier level.

Teaching Techniques :

There is general agreement among educationists on this subject and will therefore require only a passing reference. Classes should be smaller; the lecturer should not merely lecture to a class, but class-room work should be a cooperative effort on the part of lecturer and the students; there should be more tutorials and preceptorials (the latter on the pattern of the practice adopted at the Delhi University) and seminars for 3rd Year Honours and for Post-Graduate classes with provision for regular assignments, guidance and discussions : all these are accepted principles.

At the undergraduate level students need only be made book-conscious and encouraged to do a few hours' library work every week. At the Post-Graduate level he should put in 2 or 3 hours' reading for every lecture delivered, and learn to consult journals and original sources.

The problem of examination is recognised to be a complicated one and I would not tax your patience by going over well known thoughts.

The Student :

The U. G. C. has already adopted various projects relating to students' welfare, sach as encouraging the establishment of halls of residence, non-resident students' centres and health

centres, assistance to students' aid funds and text-book libraries in colleges and provision for amenities such as water-coolers.

Scholarships and stipends are now available in large numbers besides merit scholorships both at State and National levels, and loan scholarships; some of these are large enough to meet all the needs of the scholar. These are augmented by concessions in tuition fees, free and half-free studentships, and stipends awarded by colleges. The policy regarding these scholarships have to be carefully reexamined : deserving students should be picked up at the Primary education level and helped to reach upto the highest stage; as it is, there is considerable wastage as the character of the beneficiaries change from stage to stage.

It has been found that nearly 87% of our graduates get employments within a year, and about half of them get jobs suited to their education and liking. It is therefore difficult to understand why there should be so much of apathy, feeling of frustration and listlessness among them, and why there should be so much lack of earnestness and application, both when there is some uncertainty and when there is no uncertainty about the future. They must be roused to a proper stage of enthusiasm, zeal and hope;—and these must radiate from the teacher. Yes, I think that depressing feelings are imbued in them from their teachers, their elders and from society at large, and implanted in them by political leaders. We may not directly cure the ills of Society, but it should be our concern to counteract the evils of agitational politics and to do our duty to the teachers.

The Teacher :

This brings me to the problem of teachers, and if I have deferred my observations about them till the very end it is because I want them to last.

In any scheme of education the most important factor is the teachers, because it is they who can make or mar a scheme. Shortage of teachers at all levels is a world problem and it is most acute in our country.

Teachers for the Primary stage must come from the products of secondary education, and for the present those for Secondary schools will come mostly from the colleges.

They should be carefully selected at an early stage and helped to complete the education for which they are suited, with liberal financial assistance.

I would suggest that instead of providing for the B. T. course after graduation only for a fraction of the teachers, this should be made one of the courses of study at the 3-year Degree Stage. The course-content should be thoroughly overhauled and formulated accordingly.

For postgraduate studies and research we must have the very best teachers, even the "second best" will no do, and for college education also we must have the best of university products. Unfortunately we have a meagre supply of "doctorates"; while 12,000 doctorates are awarded every year in the U. S. A., 10,000 in Russia, and 1,500 in the U. K., in India only 3,900 were awarded in *five years*. The out turn of first class M. A.'s is also too meagre.

Far too large a propotion of the meagre supply are lured to non-academic services by better prospects offered by Govt., and more so by commercial firms. Further, all of those that are available for research, are not available for teaching. In the U. K. some of the best men are lured away by higher salaries and better research facilities offered by government establishments. And the brutal fact is that many of them turn to university-type pure research because they are no longer required for their original purpose. But they are lost for ever to the universities and to teaching. So it is in India. Those that are taken away by the C S I R, the National Laboratories and such other organisations are lost for ever to teaching.

Every endeavour should be made to keep the best university products for research *and* teaching in universities and colleges. The country must therefore offer to them attractive salaries and service condition—not merely such as 'compare favourably' with Class I service, but at least the initial portion of the actual Class I service-scale—and what is more important, congenial working conditions such as research facilities, reading room and suitable arrangement for relaxation. Given these, the college/university may require the teacher to remain in the campus for a reasonable period beyond his assigned work for any day.

The University Education Commission noted that "out school teachers learn all of whatever subject they teach before reaching the age of 24 or 25 and then all further education is left to 'experience', which in most cases is another name for stagnation". This unfortunately, is true to a certain extent of our teachers in colleges and universities. Do not even our most brilliant research workers continue in the same field even when continuing work may be left to research assistants ?

I would not like the adoption of the practice in USSR of reviewing the performance of a teacher every five years (to find out whether he can be replaced by a better one), of that in U. S. A. where a teacher is certified for a specified period. Security of service is the most to be desired in our country.

A true teacher is inspired by the eternal verities preached by our ancient rishis— "let our learning be fresh and vigorous". He, will therefore *voluntarily* keep his intellect keen and receptive by creative research or by taking refresher courses and attending seminars. Only in that way he may be sure that year by year he and his work will become more and more essential. The teacher is the chief instrument in the evolution of the nation, the visionary architect, who builds the future citizen with "mortar that the heart has made her own."

"The visionary architect" ! That is the teacher. May we all prove worthy of being so described.

RESEARCH IN CURRICULUM IMPROVEMENT

by GUNVANT B. SHAH, *Centre for Advanced Study in Education and Psychology, M. S. University, Baroda.*

OUR SCHOOLS need a continuous programme of curriculum improvement to meet the problems posed by our complex culture and the everchanging world. The problem of curricula and syllabuses is one of the main concerns of all who are interested, in whatever capacity, in the field of education. Every nation is deeply concerned with relating its curricula to present-day needs and the realisation of this led UNESCO to call on the International Advisory Commitee on the School of Curricula 1956-60, to investigate the problem. In India The Secondary Education Commission strongly recommended the establishment of Bureaus or Boards for curricular research in the following words:

"We would recommend, as a proposal of high priority, the establishment in each State and at the Centre—preferably in association with teachers' Training institutions—of Bureaus or Boards charged with the duty of curricular research on lines which have been successfully tried in some western countries, notably the United States. It should be the function of such Boards constantly to evaluate and sift the existing curricula in the light of the students' psychological interests as well as the changing and developing sociological needs. The details of the curricula in each subject should be settled on the basis of this continuous research."[1]

There is a general agreement to-day that a new pattern of curricula is needed to meet the new pattern of our national life and to train our pupils to take a worthy part in a new scientific age. There is very much less agreement as to what form the new pattern should take. There is a tendency to say, let the universities make their new demands on the secondary schools and the secondary schools of the primary schools, and so we shall get in a painless manner the improvement that is really required. The education of

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1. *Report of the Secondary Education Commission*, Ministry of Education, Government of India, Second Edition, 1954.

the vast majority of average citizens is now distorted because of the pressure of prestige-winning education designed for the academically successful. This means that subject teaching must be thought out not merely 'vertically' in terms of reaching a reqired standard of efficiency at the end of a course of study, but 'horizontally' in relation to other subject being taught to the child at the same time, so that one constantly throws light upon the others. Thus, it is now necessary to provide the pupils the core of knowledge, on which to build an educational pattern for the study from which all types of individuals may branch off at appropriate levels to find their own most satisfactory niche in the society. It is unfortunate that little systematic effort has been made so far to develop and improve the curriculum. The need to undertake research in the development of curriculum with a view to improving the existing courses is quite obvious.

A rationale of Curriculum Improvement

For centuries curriculum had been narrowly conceived and all the emphasis had been put on bookish knowledge. It has now been realised that this narrowly conceived bookish knowledge does not provide the right kind of preparation for life. Curriculum research is the only systematic procedure to effect change in the present pattern. As Whitney defines it.

"Curriculum research deals with those rather generally agreed upon procedures and techniques that lead to a better selection of socially valuable content material, its functional organisation and its validation and verification in actual use."†

Curriculum improvement is not merely a theoretical pursuit of a researcher. It is a process of changing the existing pattern after carefully trying out the suggested pattern. Any research in curriculum improvment is to be viewed and valued in the light of the following criteria:

Criteria :

(i) Generalized objectives of instruction;
(ii) Socially related courses of study;

† Whitney, F. L., *The Elements of Research*, Asia Publishing House, Indian Edition, 1961, Bombay; P. 348.

(iii) Well conceived outcomes of learning;
(iv) Dependable evalution of behavioural outcomes;
(v) General principles of curriculum construction;
(vi) Specific objectives of subjects;
(vii) Experimental try-out of courses;
(viii) Analysis of related research;
(ix) Systematic organisation of research programme;
(x) Usable course form with unambiguous directives.

Difficulties in Curriculum Improvement :

Many educational thinkers of our country are giving lip service to the cause of curriculum improvement when they talk of curriculum based on sound curricular experiences. They seem to a accomplish little in implementing what they think worth implementing. This is because of certain inherent difficulties to be overcome before any programme of curriculum improvement is launched. As mentioned in 1951 yearbook of Association for Supervision and Curriculum Development (ASCD) the main difficulties are as under :

(i) Belief in traditional content and approach
(ii) Failure to recognize need for in-service education
(iii) Belief in rugged individualism
(iv) Fear of community criticism
(v) Choosing the path of least resistence
(vi) Lack of 'know-how'
(vii) Satisfaction with a 'directives' approach
(viii) Fear of experimentation
(ix) Ignorance of or indifference to research

These are some of the main difficulties which beset the research worker throughout the conduct of the programme of curriculum improvement.

One Example :

The National Council of Educational Research and Training in collaboration with Health, Education and Welfare Department of U. S. A. Government have taken up a project on Mathematics curriculum. The present project of Department of Curriculum Methods and Textbooks (DCMT) has been undertaken with the following object :

"To develop a new curriculum in mathematics in the light of the objectives of teaching the subject, and to try out the

experimental curriculum by adopting suitable techniques of teaching and learning."

The major task in the present study is to evolve a rationale of curriculum development. The planners of the project think that in the absence of any theoretical frame work for the development of a curriculum in India, it is useful to take help of a number of empirical studies and theoretical formulations on the subject of curriculum construction available in several advanced countries. The important stages visualized in the development of the curriculum are as follows :

(a) Formulation of objectives
(b) Selection of the learning material
(c) Organisation of the learning material
(d) Development of suggested learning experiences in the light of the objectives and specific learning material.

Conclusion :

According to its Latin origin a curriculum is a 'runway', a course which one runs to reach a goal. Then the question is : "what kind of curriculum do we envision for the next five years ?" We have tried to follow the curricular pattern as envisaged by Secondary Education Commission a decade ago. The directives provided in the report of the commission were by no means based on a sound programme of research in curricular improvement. Despite what can be said in favour of the new pattern suggested by the Commission, the fact remains that it had no base in terms of research. This is really significant in view of the fact that the commission too has strongly presented the case of curricular research. One can only hope that at least the new commission will base its recommendations with regard to curriculum on the basis of research in curriculum improvement. Research scholars in the field of curriculum development should also work with the teacher who has the responsibility of translating their findings into a school curriculum. Unless this is done, the process of teaching and learning will continue to be in a state of aimlessness.

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PRIMARY EDUCATION AND ITS CURRICULUM IN MADHYA PRADESH

by V. N. BAGCHI, *District Educational Officer, Indore.*

THE PRESENT state of Madhya Pradesh with an area of 1,71,210 sq, miles for a total population of 3,23,94,000 living in 202 towns and 82178 villages having 43 districts and 190 tehsils, was formed on the first of November, 1956, as a result of the Reorganisation of States. In area Madhya Pradesh is the biggest state of the Indian Union and seventh in order of population, the density per sq. mile being only 189. It is centrally situated and is truely called the 'heart land' of the Indian Union.

Considerable progress has been made in this big state of Madhya Pradesh in the field of Primary education since its birth. The duration of the Primary Course has been made uniformly of five years in all parts of the state and a unified syllabus, on the pattern of Basic Education is followed in all schools of the State.

In 1955-56 the state had 20,983 Primary schools and a total enrolment of 13,56,486 students with 41,309 teachers. During the 2nd Plan, a big drive was launched for the expansion of Primary Education. An educational survey was carried out and schools were opened in almost all places with population of 500 and above and in a large number of habitations with even less than 500 people. The results were very encouraging and by the end of the 2nd Plan the total No. of Primary Schools increased to about 31,000 and the total enrolment at this stage to 20 lakhs. This roughly works out to 74% for boys and 19% for girls enrolment.

In the 3rd Five Year Plan, it has been proposed to enrol 10 lakh additional children and to raise the total enrolment at the Primary Stage to 30 lakhs—20 lakhs for boys and 10 lakhs for girls. This implies that by 1965-66, 90% of boys and 50% girls would be at school. To achieve this target 10,000 new schools are to be opened and 30,000 Primary School teachers are to be appointed upto the end of 1965-66 session annually at the rate of 5540 teachers. Comparatively

increased provision has also been made for supervisory and inspecting staff to improve the qualitative side of education.

One of the major weaknesses of the development of education of Madhya Pradesh at the time of its inception was the low percentage of trained teachers. The situation in this respect even more deteriorated further with the large expansion of education that had taken place between 1947 and 1956. Therefore, with a view to make qualitative improvement of Primary Education an important programme of enlarging teacher training facilities in the state was taken up during the Second Five Year Plan Period and the result was an increase of 106 Primary Teachers Training Institutions in 1961-62 from only 44 in 1955-56. The duration of the training course for Primary Teachers is one year and it is proposed to increase it to two years as early as possible.

Similarly with a view to improve qualification of Primary teachers, the prescribed minimum qualifications for Primary School Teachers has been made as Secondary School Leaving Certificate Examination and it is worthy to be noted that the recruitment of untrained new teachers in Primary Schools is totally stopped. The scales of pay of Primary teachers, which was very low at the inception of the new state of Madhya Pradesh has been increased to compare favourably with other states and made uniform throughout the State.

With the introduction of Panchayat Rajya in the State, whose elections are successfully going on, with a view to introduce a uniform pattern of administration of Primary education in the State the principle of democratic decentralization would be enforced and at the same time on account of different laws in respect of Compulsory Primary education for the State as a whole.

In order to give standard learning material in the hands of the students a separate wing in the Directorate of Education for the production and selection of literature for teachers and students has been instituted which has published better and cheap text books in all the Primary School subjects and 26 books have been nationalised so far.

Basic Education :

In 1955-56, the state had 1304 Basic schools with 131453 students. During the Second Plan Period, a fair number of

Primary Schools were converted to the basic pattern. In 1960-61 the total number of basic schools was about 2250 and the total no. of students about 1·75 lakhs. It is proposed to convert about 600 additional schools into basic pattern during the 3rd Five Year Plan. All the training institutions in the State are running on basic pattern so as to make available more trained teachers for basic education can be expected to advance at faster rate in the State as years roll on.

In the curriculum of basic schools the core phase of the curriculum has been adopted in the state. The productive work and creative activity involving nature and society, form the core or educational media around which the whole academic curriculum of the elementary school revolves. These activities are intended to lead towards co-operative endeavour, planning, accuracy, initiative and individual responsibility in learning as also in acquiring knowledge and understanding pertaining to school subjects in a natural and meaningful way. Only such activities form part of the basic curriculum, which have their roots in the community, which have got an educational potential in them and which go in conformity with the needs and maturity level of the students. These activities are performed in such a way that the students realize their social significance and learn dignity of manual labour and thus, develop such attitudes, interests and skills which contribute to promote an enlightened citizenship.

With these principles in mind, in the basic curriculum of our state, apart from craft and other activities relating to nature and society the basic curriculum includes the following school academic subjects, which are taught on the principles of corelated teaching.

1. Mother tongue.
2. Mathematics.
3. Social Studies.
4. General Science.
5. Arts.

(1) Mother tongue forms the basic of all communication which helps in transmitting to the child our treasure of inherent culture so that it is conserved, enriched and vitalised. It also helps in developing the social efficiency

and the skills of critical and creative thinking. The teaching of mother-tongue in Basic education, therefore, enjoys a significant place. It enables the students to speak, read, write, and comprehend their mother-tongue correctly and enjoy and appreciate its simple literature.

(2) Mathematics in the basic curriculum helps the students solve numerical and spatial problems arising in their on going day to day life by providing to them with useful material.

(3) Social Studies are intended to equip the students with basic understandings, interests and skills which help to promote healthy human relationships, which our nation needs foremost at the face of the problems of national and emotional integration and social distortions.

(4) As science is assuming great importance in our daily life today, training in citizenship would be seriously handicapped without acquiring basic understanding of the fundamental principles involved in natural phenomenon, influencing the life of students and things of their daily use. At the face of many superstitious beliefs, prevelent in our country and which stand detrimental to the national growth, the study of general science is of utmost importance in the basic education to create and foster scientific attitudes in the students so that they may also behave rationally in regard to personal and social matters as well.

(5) The main function of arts in basic curriculum is to provide an opportunity for self-expression through line and colour or through all available media, such as, clay, sand, wood, paper, pulp, leather, etc. It gives ample scope for the creative impulses and talents of individual children and becomes a source of joy to them. It arouses in them a sense, a love and an appreciation for beauty and distaste for vulgarity and indecency in both private and public spheres. The main technique involved in art education is to be 'wrought' or develop an aesthetic sense for beauty, and not to be 'taught' in the formal manner like other subjects and that is why in the curriculum of basic education for elementry stage in our state, art has not been included as a specific subject in the academic curriculum but it also forms a core of all the activities specially forming part of productive and creative work.

With the object of having primary education as self-sufficient and which may lay a sound basis for the training for citizenship, the State Department of Education in Madhya Pradesh is striving hard to convert, as early as possible, all the primary schools into basic ones. But it is a colosal task, which involves the following problem:

(*a*) *Financial Resources :*

The financial resources required for it are beyond the means of our national economy and as such a firm and a gradual step is being taken in making all the primary schools as basic schools. But the state of Madhya Pradesh has made available to the Education Department a considerable portion of the State budget to meet this demand and, therefore, the progress in this field is inevitable.

(*b*) *Material and other resources :*

Basic Education requires a good deal of material and other resources for its smooth-working. The local initiative in this connection has started giving a good impetus by making available for the schools the buildings of Panchayats, Voluntary Monitary Contributions, etc., along with plentiful of Community resources.

(*c*) *Good teachers :*

The success of basic education as a whole and effectiveness of its curriculum in particular depends much upon the quality of teachers. Towards this end as has already been stated all the 106 teachers training institutions of the State, which are preparing every year more than 13 thousand elementary school teachers are running on Basic Patterns. The recruitment of untrained teachers in the state has been totally stopped and the scales of pay of primary school teachers are considerably improved.

(*d*) *Text books :*

With a view to make available to the students standard reading and learning material, the state Department of Education in Madhya Pradesh have nationalised all the text books, prepared by the experts and the Government have published them for the elementary schools at comparatively reasonable cost.

Growth of education and its curriculum is always a continuous process and hence, much research work, experimentation and thinking is needed in this field. The State Government. has recently started a State Institute of Education at Sehore for this purpose and many training institutions are also rendering considerable service in this field.

All these attempts are helping towards the evolution of a flexible basic curriculum throughout Madhya Pradesh.

US GRANTS FOR SUMMER SCIENCE INSTITUTES

The Govenment of India and United States have concluded an agreement providing for US foreign exchange and rupee grants totalling Rs. 85 lakhs for an expanded programme of Summer Science Institutes to be held in this country in 1965.

The grants consist of 1·1 million in dollars and 31 lakhs in rupees.

The summer institutes are aimed at familiarizing Indian teaching staffs with the most modern methods of instruction in sciences and mathematics developed in the US.

They are held in the summer months because schools and colleges are closed then and their faculties and plants are unoccupied. These are also the months when the services of top-ranking US faculty members are available.

These institutes are organised jointly by India's University Grants Commission, the National Council of Educational Research and Training, and the US Agency for International Development, with the co-operation of the US National Science Foundation, which has been sponsoring similar institutes in the United States regularly for the past decade.

The US grants will finance contracts providing the services of 184 American consultants and four American co-ordinaters and six months' training in the United States for 59 Indian participants.

EDUCATIONAL PROBLEMS TO BE STUDIED

The Education Commission, appointed by the Union Government, is said to have already set up several groups described as "task forces" to study all aspects of the country.

Apart from ascertaining the opinions of well-know educationists, the Commission has written to different State Governments and Union Territories to submit their views and suggestions.

Miss Karuna Gupta, Assistant Director of Public Instruction, is collecting data bearing on different aspects of the problem on behalf of the West Bengal Government.

The problems in which the task forces are interested relate to, among others, evaluation of the development of educational administration in the post-independence period; the role of the Government of India in education with special reference to the problems of education in the Concurrent List and that of local bodies and panchayati raj institutions in educational administration; administrative problems arising out of political pressure; and the preparation, production and distribution of text-books.

Opinion has also been sought on the constitution of an all-India education service; the selection, training, remuneration and conditions of service of the personnel of the Education Department in the State and Union Territories and the changes needed to enable officers to discharge effectively the responsibilities involved in putting across comprehensive programmes of educational expansion and reconstruction of the type envisaged in the next three Plans.

TWO MORE NAMED TO EDUCATION BODY

The Union Ministry of Education in consultation with the UNESCO has appointed Prof. Shumvosky, Professor of Physics, Moscow University, and Prof. Sadatoshi Ihara, Professor of the first faculty of Science and Technology, Waseda University, Tokyo, Japan, as members of Education Commission.

According to its constitution announced in July 1964 the Education Commission was to consist of 16 members and a number of consultants. But at the time only the names of 14 members and 4 consultants were announced. With the appointment of Prof. Shumvosky and Prof. Sadatoshi Ihara the strength of the members of the Commission is now complete.

Besides the four names declared in July 1964, the services of a few more consultants have also been sought by the Ministry of Education.

MOULDING SCIENCE TALENT IN SCHOOLS

Dr. A. C. Joshi, Vice-Chancellor of Punjab University, yesterday suggested that the present level of development in

the country and the latest advances in science made in highly developed countries should be taken into consideration while reshaping syllabi for the teaching of science at the earliest stage of school education.

Dr. Joshi, inaugurating the ninth annual conference of All-India Science Teachers' Association here, said in a country which was steeped in poverty and where agriculture continued to occupy a preponderant position in the economy, new methods of food production and new sources of energy had to be evolved to assure minimum basic needs to the vast population.

"And so, situated as we are today, we cannot do without application of science and technology, whether we like it or not," he said. Apart from the inclusion of atomic science and space science in the curriculum, emphasis should also be on rural conditions, conservation of resources, food production, etc., so that every student after stepping out of the school would be equipped with the basic idea of the things around him. he added.

Dr. Joshi suggested that at least Rs. 10,000 should be set apart in every high school for providing a well-equipped workshop where students would have the facility of making science apparatus and also help the teachers to improvise the apparatus.

He also stressed the need for stepping up the teaching of mathematics in schools as this subject was very vital for the study of science. He felt that advance mathematics should be imparted to students at the school stage as that would contribute a great deal for the advancement of science.

Referring to the system of awards announced from time to time by the Government in their search for science talent, Dr. Joshi said that at present many of the awards were based on examination results. He said this should be done away with as the main purpose behind instituting awards was to discover the inventory talent of students. He suggested that the awards strictly be on the exhibits displayed by students. The exhibits should be their own hand work, he added.

PRESENT EXAM. SYSTEM "INACCURATE"

Results of U. G. C. Study

Conventional examination systems in India are "old-fashioned, inaccurate and erratic" and seldom reveal the true ability of a candidate, according to a University Grants Commission study into the examination techniques of Indian universities.

The study was made on the basis of papers submitted to the commission from time to time and on the latest statistics—up to January, 1964—collected and tabulated under a study entitled "Three Studies in Examination Technique."

After analysing examination papers from different universities and the marking systems of examiners, the Commission has come to the conclusion that the criteria of "performance" is very ill-defined and almost entirely dependent on failures. More than 60 per cent fail annually—may be due to the vagaries of the examination system.

Examiners' Errors

Examiners' errors are "not less than seven marks per script" and many border-line candidates may fail on account of these factors, a statistical analysis shows. Examiners differ in their judgments. On an English paper in 1963 an examiner gave pass marks to 60 per cent of his scripts, while another gave 11 per cent pass marks. In the same State and in the same paper, another examiner passed 60 per cent, while yet another only two per cent. This happened despite the fact that the scripts had been so arranged that, in each case the examiners has scripts of the same quality.

Double marking systems, utilised to test the efficacy of the marking systems, also showed the same discrepancy with regard to economics, history and logic. Even mathematics was subject to the same inconsistencies.

In fact, a study of the numerical results shows that there are remarkable differences between the marks of different examiners. The mean mark assigned to a set of scripts may vary by as much as 10, and the differences in particular scripts may be much larger.

Much of the blame for the wide disparities in marking are due to lack of planning among examining authorities in the setting up of a uniform code for the evaluation of papers.

Marks may be awarded for ability, knowledge, memory, intelligence, power of expression or even handwriting. Thus, in single marking system—which is the current methods of examination in most Indian universities—the general picture presented by an examination cannot command much confidence, since a different choice of examiners would certainly have produced a very different picture, the study adds.

Faulty methods in paper setting have also hindered proper evaluation of a candidate's ability. More than 90 per cent of the questions set are designed to test a candidate's capacity to recall information, rather than his capacity to understand and apply his knowledge.

Among the recommendations made *inter alia*, are the marking of a candidate on the basis of his average score over a large number of papers.

In this connection, the study says that the requirement of passing separately in a large number of papers should be abandoned "since it introduces a high probability of failure on account of examiners' errors."

It has also pleaded for the inclu-short answers and multiple choice questions. This would increase the total number of questions and provide for better coverage of the content of the syllabus, the study concludes.

SHANTI SWARUP BHATNAGAR MEMORIAL AWARDS

Shanti Swarup Bhatnagar Memorial awards were presented by Mr. M. C. Chagla, Union Minister for Education, to 12 leading scientists in Delhi on Thursday.

Four awards, each prize of Rs. 10,000, are given every year to four scientists for outstanding work in physics, chemistry, medical and engineering. At Thursday's function the awards, won in 1960, 1961 and 1962 were given.

Congratulating the recipients of the awards, Mr. Chagla said that a scientific spirit was necessary for progress.

"Unfortunately scientists are not given due recognition in India." he said. The SSBM awards given by the Council of Scientific and Industrial Research were intended to encourage scientific research. The award winners were the 'Nobel laureates" of India and would be recognised as such by world scientists.

The Government, he said, was working on a scheme under which students with a scientific bent of mind would be encouraged in every way.

Dr. S. Hussain Zaheer, Director-General of the CSIR, said that the awards were instituted by the CSIR in memory of Shanti Swarup Bhatnagar, a noted scientist. The late Dr. K. S. Krishnan, Director of the National Physical Laboratory, was the first recipient of a Shanti Swarup Bhatnagar Memorial award. All award-winning scientists had to be below 45.

The 1960 award winners are : Dr. M. G. K. Menon, senior professor and Deputy Director (Physics) at the Tata Institute of Fundamental Research, (contributions in the field of Lyrics elementary particles and cosmic rays); Dr. T.R. Govindachari, Director of the CIBA Research Centre, Bombay (work in the field of plant chemistry); Dr. T. S. Sadasivan, Director of the University Botany Laboratory. Madras (contributions to mycology and plant pathology); Dr. H. N. Sethna, Atomic Energy, Commission, Bombay (outstanding contribution in designing and commissioning the plutonium plant, Trombay).

The 1961 award winners are; Dr. G. N. Ramchandran, Director of the UGC Centre of Advanced Study in Physics, Madras University (contributions to the study of protein structure); Dr. (Mrs.) A. Chatterjee, Khaira professor of Chemistry, Calcutta University (work in the Chemistry of natural products, especially in the Chemistry of alkatoids and coumarins); Dr. M. S. Swaminathan, head of the Botany division, Indian Agricultural Research Institute, New Delhi, (original contribution in the field of radiation genetics and mutation research); Dr. R. B. Arora, professor of pharmacology, All-India Institute of Medical Sciences, New Delhi (contribution to cardiovascular pharmacotherapeutics).

The four scientists honoured for their work in 1962 are Dr. Vikram Sarabhai, Professor of Cosmic Ray Physics, Physical Research Laboratory, Ahmedabad (contribution to cosmic ray, physics); Dr. S. C. Bhattacharya, scientist, National Chemical Laboratory, Poona (work on terpenes and related natural products, musk compound and analytical chemistry); Dr. B. K. Bachhawat, professor of bio-chemistry, Christian Medical College and Hospital, Vellore (work in biochemistry) and Mr. M. M. Suri, Director, Central Mechanical Engineering Research Institute, Durgapur (contribution to diesel locomotive engineering).

OUR CONTRIBUTORS

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Is Joint Educational Adviser in the Ministry of Education. Was born on 12-10-1914 at Hardoi (U. P.). Took his M. A, in Mathematics in 1934 in the I Division from the Lucknow University. Was a Lecturer in Mathematics and Statistics in Lucknow University from 1939 to 1946. Obtained doctorate in Pure Mathematics in 1944. Served in the Govt. of India (Home Deptt.) from July 1946 to August 1947 as Statistical Officer. Joined Ministry of Education, Govt. of India, on 9-8-1946 and since then held the posts of Educational Officer, Asst. Educational adviser, Deputy Educational Adviser and now Joint Educational Adviser. In 1956 was deputed by the Government of India to observe the educational system in Indonesia, Japan, Philippines, Hawaii, the U. S. A. etc. Was deputed in 1961 to study the system of Correspondence Courses in Australia. In 1962 services placed at the disposal of UNESCO to advise on preparation of the educational development plan for Liberia (West Africa). Attended the III Commonwealth Education Conference held in August 1964.

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Gunvant B. Shah

Is a Senior Research Fellow in the Centre for Advanced Study in Education, Baroda University. Was born in 1937. Took his B. Sc. (Hons) from M. T. B. College, Surat. Obtained his B. Ed. and M. Ed. degrees in first class from Baroda University and was a merit scholar. Got Ph. D. in education in 1964. Has written several books on education and contributed many articles to well-known educational journals.

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D. C. Sharma

Prof. D. C. Sharma was for many years Professor of English at the D. A. V. College, Lahore. He has been head of the Department of English in the University of Punjab and has also served on various University Boards. Has been connected with the AIFEA for a long period and has held numerous important positions in this organization.

He is currently its President. He is a Member of Parliament representing the Gurdaspur Constituency.

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RAMANI MOHAN ROY

Is Principal, Surendranath College, Calcutta. Born Ist February, 1901 in Dacca (East Pakistan). Educatian in Scottish Church Collegiate School, Presidency College and University Gollege of Science and Technologv, Calcutta. M. Sc. (Gold Medalist). Working in teaching, research, and administrative posts in first-grade educational institution in Calcutta, including the School of Tropical Medicine, and the Indian Association for the Cultivation of Science, since September 1925; as Principal since 1955. Member of the Senate and of the Academic Council etc. Calcutta University since 1952. Associated with the Board of Secondary Education, West Bengal, in matters relating to syllabuses and examinations : Member of the Standards Committee set up by the UGC in 1961. Actively associated with W. B. College and University Teachers' Association since 1932 as Secretary, President and Executive Committee member, and with Calcutta sessions of the All India Educational Conference in 1937 and later.

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V. N. BAGCHI

Is District Educational Officer, Indore. Born on October 23, 1924 in Dacca, took his M.Sc. degree in Botany from Agra University in 1948. Was lecturer in Botany atthe M. L. D. College Gwalior. Was commissioned in 1950 in the Armed Forces, NCC Wing. Was the Captain of the Madhya Bharat Football team in the National Championship of 1954.

Has travelled extensively in India to study and collect different flora.